



BEng Metallurgical Engineering

- [University of Pretoria](#)
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- BEng Metallurgical Engineering

South Africa is not only blessed with the world's largest mineral deposits of gold, chromium, platinum, vanadium and manganese, but also has extensive reserves of iron, lead, zinc, copper, nickel, coal and diamonds. The minerals industry contributes to some 50% of South Africa's exports and is one of the largest employers in the country. Metallurgical engineers play a key role in the production of minerals and metals and help to process metals into final products with added value. In this way, the maximum income is generated in international markets. Components made from metals and other materials are used in all aspects of modern life.

Metallurgical engineers play a key role in the process of extracting wealth from the resources of South Africa and can be involved in three major fields of specialisation:

- **Minerals processing.** Processing the ore to release and concentrate the valuable minerals from the mineral resources.
- **Extractive metallurgy.** The processing of mineral concentrates to metals through pyrometallurgy or hydrometallurgy as recovery steps.
- **Materials production, performance and integrity.** The development of new alloys, the production of useful materials from raw metals, forming through casting and laser-assisted 3D printing, as well as joining through welding are examples of metallurgical applications. The forensic investigation of failures is also of great importance as it contributes to insight into how materials function and fail.

Graduates in metallurgical engineering are responsible for process/component design and optimisation, commissioning, marketing, business analysis and research. There is a place for everyone with the right attitude and interest in the field of metallurgical engineering!

For more information, please consult the Faculty webpage.

Career Opportunities

Metallurgical engineers unlock the riches of deposits of metal ores and minerals and optimise the manufacture and performance of metallic components. You'll find metallurgical engineers where valuable minerals are recovered from ore, where metals are produced from the minerals and where the metals are converted into useful materials as well as into high-performance products. Areas of



specialisation include minerals processing, extractive metallurgy, materials engineering and performance, advanced manufacturing processes, including laser-assisted additive manufacturing and welding, as well as failure analysis and forensic engineering.

Programme Code

12130005

Closing Dates

Applications for this plan have closed.

Admission Requirements

Important information for all prospective students for 2023

The admission requirements below apply to all who apply for admission to the University of Pretoria with a **National Senior Certificate (NSC) and Independent Examination Board (IEB) qualifications**. [Click here](#) for this Faculty Brochure.

Minimum requirements: 4-year programme

Achievement level

English Home

Language or

English First

Additional

Language

NSC/IEB

5

Mathematics

NSC/IEB

6

Physical Sciences

NSC/IEB

6

APS

35

The suggested second-choice programmes for BEng (Metallurgical Engineering) are BSc (Chemistry), BSc (Mathematics) and BSc (Physics) if your APS and subject requirements of your first-choice programme are not obtained.

Minimum requirements: ENGAGE 5-year programme



Achievement level

English Home

Language or

English First

Additional

Language

NSC/IEB

5

Mathematics

NSC/IEB

5

Physical Sciences

NSC/IEB

5

APS

30

Life Orientation is excluded when calculating the APS.

Conditional admission to the four-year programmes in the School of Engineering is guaranteed only if a prospective student complies with ALL the requirements as indicated in the table "Minimum requirements: 4-year programme".

Admission to the Engineering Augmented Degree Programme (ENGAGE) in the School of Engineering will be determined by the NSC results, achievement levels of 5 for Mathematics, Physical Sciences and English, and an APS of 30.

Students may apply directly to be considered for the ENGAGE programme.

You will be considered for final admission to degree studies if space allows, and if you have a National Senior Certificate (NSC) or equivalent qualification with admission to bachelor's degree studies, and comply with the minimum subject requirements as well as the APS requirements of your chosen programme.

Applicants with qualifications other than the abovementioned should refer to the Brochure: Undergraduate Programme Information 2023: Qualifications other than the NSC and IEB, available at [click here](#).

International students: [Click here](#).

Transferring students

A transferring student is a student who, at the time of applying at the University of Pretoria (UP) is/was a registered student at another tertiary institution. A transferring student will be considered for admission based on NSC or equivalent qualification and previous academic performance. Students who have been dismissed from other institutions due to poor academic performance will not be considered for admission to UP.

Closing dates: Same as above.

Returning students



A returning student is a student who, at the time of application for a degree programme is/was a registered student at UP, and wants to transfer to another degree at UP. A returning student will be considered for admission based on NSC or equivalent qualification and previous academic performance.

Note:

- Students who have been excluded/dismissed from a faculty due to poor academic performance may be considered for admission to another programme at UP, as per faculty-specific requirements.
- Only ONE transfer between UP faculties and TWO transfers within a faculty will be allowed.
- Admission of returning students will always depend on the faculty concerned and the availability of space in the programmes for which they apply.

Closing date for applications from returning students

Unless capacity allows for an extension of the closing date, applications from returning students must be submitted before the end of August via your UP Student Centre.

Minimum duration of study

4 years, full-time

Faculty Notes

All modules will only be presented in English, as English is the language of tuition, communication and correspondence at the University of Pretoria.

Faculty Yearbooks: [click here](#).

The University of Pretoria has decided not to set a specific closing date for applications to non-selection programmes for 2023. Applications will close when the available study spaces are filled (**close on availability of space**). Once the available number of study places for a specific programme are filled, no further applications for that particular programme will be considered. All applicants are therefore strongly advised and encouraged to submit their applications as soon as possible after 1 April 2022 and to check the application site (UP Student Portal) regularly.

The Faculty of Engineering, Built Environment and Information Technology at the University of Pretoria is a leading source of graduates in the engineering, built environment and information technology professions. We achieve this by a focus on research to drive innovative and enquiry-led teaching for



educating and positioning our students to be leaders in their professions. The Faculty has extensive and cutting-edge teaching, learning and laboratory facilities integrated with the excellent suite of facilities and services offered by the University. We facilitate access to our qualifications through our extended programmes but expect our students to excel and develop as future professionals through our programme offering. We invite you to consider enrolling in one of our programmes if you share our vision of excellence and want to position yourself as a leader in the professions that we support.

The Faculty is organised in four schools: the School of Engineering, the School for the Built Environment, the School of Information Technology and the Graduate School of Technology Management. The School of Engineering is the largest of its kind in the country in terms of student numbers, graduates and research contributions and offers programmes in all the major engineering disciplines with many specialisations also offered at undergraduate and graduate level.

The University of Pretoria aims to be internationally competitive while also locally relevant. Advisory boards at both faculty and departmental level promote alignment and excellence in our teaching and research activities. Where applicable and available our programmes are accredited by statutory and professional bodies at both national and international level.

Enquiries about the programme

[Click Here](#)



How to apply



Online Application





Note: Also consult General Rules and Information on the Yearbook website for additional information.

Disclaimer: Due to the continuous restructuring of the Faculty and this website, some of the information displayed here may not fully reflect the most recent developments in the Faculty. Any discrepancies that are experienced may be taken up with Student Administration of the Faculty.